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A Comparison of Training Effectiveness of Formal and On-the-Job Enlisted Rate Training in the United States Coast Guard

by

LT Robert Michael O'Brien

December 1989

Thesis Advisor: Benjamin Roberts
Co-Advisor: Alice Crawford

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Evaluation of Training Effectiveness, Job Performance Comparison, Productivity Assessment, On-the-Job Training (OJT), Formal Classroom Training

This study compares the effectiveness of on-the-job and formal training methodologies of United States Coast Guard enlisted rate training as a function of job performance and rate of advancement. Results indicate there is no significant difference in evaluated work performance between "A" school and striker graduates at the E4 and E5 rank. The comparison of rate of advancement to E5 indicates the Boatswains Mate (BM) and Machinery Technician (MK) personnel undergoing the striker, on-the-job training advance significantly faster than their "A" school counterparts. The difference in rate of advancement between Yeoman (YN) and Storekeeper (SK) strikers and "A" school graduates was not found to be statistically significant. Recommendations are made to perform a cost effectiveness study, review selection criteria for "A" schools and establish striker program standards.

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Benjamin Roberts	(408)646-2792	54 Ro

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A Comparison of Training Effectiveness of Formal and On-the-Job Enlisted Rate Training in the United States Coast Guard

by

Robert Michael O'Brien
Lieutenant, United States Coast Guard
B.S., University of Central Arkansas, 1977

Submitted in partial fulfillment of the
requirements for the degree of

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from the

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December 1989

ABSTRACT

This study compares the effectiveness of on-the-job and formal training methodologies of United States Coast Guard enlisted rate training as a function of job performance and rate of advancement. Results indicate there is no significant difference in evaluated work performance between "A" school and striker graduates at the E4 and E5 rank. The comparison of rate of advancement to E5 indicates the Boatswains Mate (BM) and Machinery Technician (MK) personnel undergoing the striker, on-the-job training advance significantly faster than their "A" school counterparts. The difference in rate of advancement between Yeoman (YN) and Storekeeper (SK) strikers and "A" school graduates was not found to be statistically significant. Recommendations are made to perform a cost effectiveness study, review selection criteria for "A" schools and establish striker program standards.

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I. INTRODUCTION

As the Coast Guard enters the 1990′s, the organization is faced with uncertainty regarding level of funding as a result of the federal deficit and political processes. This reality forces an evaluation of the strategy, goals and plans of operation required to meet our missions. One important aspect of the organization is the development of our human resources, which makes them capable of performing jobs that collectively define Coast Guard missions. As a personnel intensive service, it is a mandate that our members are trained in the most efficient and effective manner possible. There is no single "right" way to train, but there are always more effective and efficient methods and programs by which we can establish the knowledge, skills and abilities of Coast Guard personnel to perform their jobs to standards.

Personnel productivity and job performance are difficult to quantify in a service organization. If these indicators are analyzed in the context of the organization′s strategy and scope of the study made, they can provide information to aid decision making with respect to resource allocation.

This paper will address the effectiveness of the two initial enlisted rate training methodologies; (1) formal, resident "A" school, and (2) informal, non-resident, on-the-job training (the striker program). A comparison will be made of job performance measures of personnel trained by the two methods.

There are no prior assumptions about which training method should result in superior performance because there are many variables that can impact on performance and which are difficult to control. The question of which method is more effective becomes interesting in light of research that shows that programmed instruction is much more efficient than on-the-job training in respect to knowledge acquistion. The next question then becomes: how effectively are personnel performing their missions on-the-job and does the effectiveness relate to training methodology?

The external evaluation of existing training programs is important if we are to assess the real impact of our programs. Opinions of Coast Guard supervisors on the subject of training effectiveness are as diverse as the unit implementation plans of the striker program. There is certainly a place for both formal, classroom training and informal, on-the-job training as vehicles to shape behavior and develop knowledge, skills and abilities in our personnel. This study may assist in determining the proper mix of training resources we apply to our human capital to achieve the goals we set for the organization as a whole.

II. BACKGROUND

This chapter will outline characteristics and procedures of the two general Coast Guard (CG) enlisted rate training programs and provide an overview of the assignment and advancement processes.

A. GOALS AND CHARACTERISTICS OF COAST GUARD ENLISTED RATE TRAINING

The goal of Coast Guard rate training is to "...provide military personnel with the capability to better fulfill Coast Guard missions and their necessary support." (CG Personnel Manual (PERSMAN), pp. 1-2.) The specific objectives are:

- To indoctrinate personnel with an understanding of their assigned duties, to develop necessary skills and to develop a sense of responsibility within the service organization.
- To develop personnel through a balanced program of formal, resident and on-the-job training to reasonably ensure the safe and competent execution of their assigned tasks.
- To provide personnel with an opportunity to qualify for promotion and advancement.

There are currently two methods of attaining the specific CG enlisted ratings described in Appendix A. An enlisted person can attend a formal, resident "A" school or engage in an informal, non-resident striker program. The characteristics of each are described below:

1. "A" School

"A" School is a formal, classroom-oriented program of instruction which is specific for each enlisted rate. "A" schools are located in Petaluma, CA; Yorktown, VA; and New London, CT and are characterized by:

- Standardized Instruction. Lesson plans corresponding to terminal performance skill or knowledge objectives are developed for each course and presented in a relatively consistent manner to each class.
- "Trained" Instructors. Instructors are selected based on their job performance and attend an instructor training class to learn effective teaching techniques.
- Controlled Environment. "A" school is conducted in a well defined and controlled classroom, facility or shop setting which attempts to minimize external interference and control the training process.
- Resident Program. "A" school attendees are assigned specifically to the "A" school for instruction and usually reside in a student barracks.
- 10-16 Week Duration. Courses are composed of lesson plans which cover the practical factors required for advancement to E4 in a specific time frame.

a. "A" School Selection

Selection to "A" school is based upon:

- Minimum Armed Services Vocational Aptitude Battery (ASVAB) composite scores as shown in Table 1.
- Informal assessment of individual motivation by Commanding Officer to complete and make use of the training.
- No non-judicial punishment or civil convictions for six months prior to applying for "A" school.
- Special requirements for sight, hearing, security clearance or citizenship.

"A" SCHOOL REQUIREMENTS

TABLE 1

Rate	School Duration	Current Wait Time	Minimum ASVAB Composite[1]
BM	10[2]	25[3]	VE+AR=101
DC	13	18	VE=MC+AS=152
EM	16	16	MK+EI+GS=152 & AR=52
MK	14	9	AR=MC=AS=150 or VE+AR=106
QM	12	2	VE+AR=110 & NO+CS=101 & AR=57
SK	10	31	VE+AR=101
SS	13	2	VE+AR=101
YN	11	9	VE+AR=106 & NO+CS=101

---

[1] CG Training and Education Manual, pp. 216-219.

[2] School Duration in weeks (as of Jun 89).

[3] Current Wait Time in months for last E3 on list.

The actual number of "A" school graduates per year, per rate is determined by Commandant, Office of Personnel (G-P), and is based on the number of guaranteed school requirements, expected separations from the service, expected number of strikers who make rate and the needs of the service. The waiting list for "A" school is publicized Coast Guard wide and is also shown in Table 1. Coast Guard policy states that within six months of reporting to one's first unit out of boot camp, the member should submit an "A" school request which establishes his position on the "A" school waiting list for that rate. He will continue to perform his assigned duties as an E2 or E3 until he is picked up for school.

b. "A" School Graduates

"A" school graduates are expected to have basic, essential rate knowledge and be able to perform technical skills at the E4 level of performance as outlined in the Enlisted Qualification Codes Manual (EQCM). An excerpt from the EQCM for the Electricians Mate (EM) rate is included as Appendix B. Class "A" school graduates are apprentices who will require on-the-job training under close supervision to carry out duties. Upon successful completion of the "A" school course of instruction, the member is normally advanced to E4 if all requirements for advancement are met (i.e., successful completion of military requirements, correspondence course and length of active duty requirements).

2. The Striker Program

The striker program is an informal program of instruction conducted at the member's parent unit. It is available for the rates which have been assessed by the headquarters force manager as being relatively non-technical and "teachable" on the job. Those rates are BM, DC, EM, MK, QM, SK, SS and YN. The instruction methodology is characterized by:

- Self-Paced, Individualized Instruction. Striker programs are self-paced and dependent upon the resources available at each unit.
- Non-Dedicated Instructors. Rated personnel assigned to each CG unit can act as on-the-job instructors to the striker, but they have other duties to perform and do not normally have access to an instructor training course.
- Normal Working Conditions. The striker program must be integrated with the operational commitments of the unit. This may allow for a full, five day striker program or it may only allow two, half-day training periods per week.
- Unspecified Course Duration. There is no specific time required by the CG to complete a striker program.
- Non-Standard Instruction or Curriculum. There are no terminal learning objectives associated with the striker program. As such, it is an ad hoc curriculum which usually results from the needs of the striker and department head of the rate being struck.

Strikers must show proficiency of each required practical and knowledge factor in their rate for the E4 level of expertise as specified in the EQCM. Each factor is verified and annotated by a subject matter expert at the unit, and later reviewed by the Commanding Officer.

Striker programs vary in their implementation, but are all based on the completion of the practical and knowledge factors required by the EQCM. The amount of time taken to complete the practical factors and compete for advancement in the striker program are dependent upon:

- Unit operational requirements.
- Command and departmental priorities.
- Individual motivation and ability.

B. ASSIGNMENT PROCESS

Following the completion of "A" school or the striker program, the member is advanced to E4. From that point, the needs of the service dictate his location of service in the Coast Guard. Graduates of both programs are expected to perform at the E4 level of expertise in their rating and are eligible for assignment to any Coast Guard unit. While strikers may stay at the unit where they have performed their on-the-job training, there is no guarantee of this. Rate vacancies are the driving force behind the assignment process. Conversely, "A" school graduates would return to their parent units upon E4 designation only if a vacancy exists. It is assumed that there is no bias towards either group in the transfer process. In other words, the detailers are concerned about previous unit experience in relation to qualifications and accrued "sea" time, but the variable of rate training method is not considered in the assignment process.

C. ADVANCEMENT PROCESS

The enlisted advancement process is detailed in Chapter 5 of the Coast Guard Personnel Manual. The objectives of the advancement process are:

- To allow an orderly progression of enlisted personnel in the rating structure.
- Ensure the required degree of proficiency at the various grade levels within each rate.
- Promote those best qualified to fill vacancies which occur.

Advancement is based on a system of servicewide competition. To qualify to compete in the servicewide examination (SWE), which is given for all rates (E4 through E6) twice a year in March and September, each member must:

- Fulfill length of active duty requirements.
- Fulfill minimum sea duty requirements.
- Successfully complete military requirements and rate technical correspondence courses.
- Complete all practical and knowledge factors for the rating considered.
- Obtain a parent command recommendation for advancement which is based on the member's assessed qualities of character and leadership potential.
- Have at least minimum enlisted evaluation marks for the period prior to the servicewide exam.

The advancement criteria is a composite servicewide examination score which is detailed in Table 2. The composite score is representative of each member's performance, seniority and knowledge. (PERSMAN, 5-C-2)

1. Job Performance

The performance factor is a cumulative measure of the member's performance at his current rate. The score is derived from the Enlisted Performance Evaluation form (Appendix C). This evaluation is conducted twice a year by each member's supervisor and the performance criteria are measured on a behaviorally anchored rating scale. It is an assessment of the member's total output or productivity to the Coast Guard as measured by military, team work, leadership, service representative and human quality factors.

2. Seniority

Seniority is quantified by assessing time in service and time in paygrade. The more job experience, the higher the weight this factor holds in the advancement process.

3. Knowledge

The knowledge criteria for the servicewide competition is assessed by the servicewide examination given twice a year in March and September. The exam is content valid with respect to the knowledge and practical qualifications required for the next higher rate. The subject matter content is divided into pass/fail and rank

SERVICEWIDE COMPETITION SCORE

TABLE 2

	Maximum Score[1]	% of Total Composite
Exam Score	80	44
Performance Factor	50	28
Time in Service[2]	20	11
Time in Paygrade[3]	20	11
Medals & Awards[4]	10	6
Maximum Composite SWE Score	180	100

---

[1] CG PERSMAN, p. 5-C-2

[2] Time in Service (TIS), one point per year

[3] Time in Paygrade (TIR), two points per year

[4] Medals & Awards, points determined by award earned as specified in CG PERSMAN, p. 5-C-2.

ordering questions. To be placed on an advancement eligibility list, the candidate must achieve a passing score on the pass/fail portion of the test. The rank ordering questions are intended to distribute the minimum and highly qualified candidates.

4. Precedence List for Advancement

The total servicewide examination composite is used to establish a precedence list for advancement of eligible personnel. A cutoff is established for every list, for every rate and is based on the anticipated number of rate vacancies in the next six month period. If above the cutoff, the member is assured advancement. If below the cutoff, the member will not likely be picked up for advancement and must again compete in the next servicewide examination. This advancement process is used for advancement to E4, E5 and E6. The only exception is at the E4 level where "A" school graduates do not compete in the servicewide examination, although they do successfully complete terminal performance objectives for the course of instruction. Strikers who pass the servicewide examination for E4 are generally advanced to E4 when vacancies are available as the entire eligibility list is considered above the cutoff. The first time strikers and "A" school graduates compete against each other for advancement is at the E5 level.

III. THEORETICAL FRAMEWORK

The goal of any training program is to change or establish a behavior which is required for the accomplishment of specific tasks of a job a person will be performing. This is successfully accomplished when the trainee posesses the knowledge, skill or ability to perform the required tasks, on-the-job, to an established level of proficiency.

This chapter will establish the theoretical significance of initial rate training and subsequent advance, and discuss the relation it has with job performance and productivity.

A. SIGNIFICANCE OF INITIAL RATE TRAINING

Initial rate training is a member's indoctrination to a specific work discipline which differs from other specialty rates within the organization. It has the following impacts on the individual:

1. Establishes Conceptual Framework

Each rate has a specific mission and a unique theory, body of knowledge and tasks which define it. For most trainees, their first involvement with the concepts of each rate is during their training as a striker or an "A" school attendee. Studies have shown that problem solving is facilitated by previously presented information which was presented in a form that required for its comprehension, the same conceptual processing as that demanded by the subsequent problem. (Lockhart, Lamon, Gick, 1988, p.36) Additionally, the manner in which an individual is taught to perform tasks, or gain a body of knowledge, or acquire problem solving skills affects the ability to make judgments and perform in the future. Initial skill acquisition is important in the development of judgment relating to the use of a set of rules. (Carlson and Schneider, 1989, p.240)

2. Scope of Job

Initial rate training will focus the trainee's attention on the requirements of the rate and will establish role perception. Expectations for the trainee's behavior and attitude as a professional petty officer are conveyed to him through the training, and is largely a function of characteristics of the trainer, the environment of the training and the course of instruction. (Goldstein, 1986, pp.88-106 and Kirkpatrick, 1985, pp.302-319)

3. Performance Standards

Initial rate training sets the standards of performance expected of a rated petty officer. These standards will be used at a later date in the evaluation process, which attempts to assess all aspects of a member's performance and his or her contribution to the organization.

4. Validity

In order to be successful, initial rate training must be content valid in relationship to the actual job requirements. It must teach to a set of job performance standards required in the field. The more valid the training program, the greater the chance of effectively establishing a conceptual framework in an individual which will provide the basis for an acceptable level of job performance.

B. SUBSEQUENT ADVANCED RATE TRAINING

Following initial rate training, the member will acquire new knowledge and skills from the unit training program, his job experiences, advanced "C" school training and correspondence courses. This subsequent training will either reinforce current behavior, provide new knowledge and skills, or contradict the initial training. The further one travels chronologically from the initial training, the greater the potential for cumulative interference with the initial framework already established and the more difficult it becomes to establish cause and effect between initial training method and observed job performance. (Freda, Hall, Ford, 1981, p.419)

C. PRODUCTIVITY AND JOB PERFORMANCE

The human captial interpretation of the experience earnings profile states that individuals are paid in direct relation to their productivity, or their earnings for the organization. As an employee receives more training, human capital is increased and more is provided to the organization in the way of output. Since people increase their knowledge and skills through work experience and formal and informal instruction, the potential for increased productivity is rewarded by advancement to the next higher paygrade. Thus, it is assumed that the more quickly a person advances, the more productive he or she is for the organization. Productivity is a relative term in a service organization and is very difficult to measure in terms of a person′s output. (Medoff, 1980, p.703) In the context of this study, a person′s total productivity is given as a function of the quality and quantity of work performed, the contribution to the well being of the unit and the professional image he conveyed to the public.

The Enlisted Performance Evaluation form attempts to capture various measures of productivity of the individual with six composite factors reflecting military manner, team effectiveness, work ability and accomplishments, leadership ability, Coast Guard representation and human factors.

Within each division of a unit, supervisors mark an individual′s performance in relation to descriptors of each aspect of a person′s performance on a scale of one to seven. These rankings will reflect the overall productivity to the service in an ideal sense. The supervisor will be assessing the individual′s problem solving capability, ability to work with others, stamina, conduct, motivation and workmanship, as incorporated in this Enlisted Performance Evaluation form shown as Appendix C.

Specifically, the work performance factor should be dependent to a large degree on the initial training the person received. It would be theorized that, all other conditions held equal, a person with a superior conceptual framework, knowledge and skills will have a higher work factor which is a reflection of higher productivity. A person with this background will also advance more quickly as a result of a higher servicewide evaluation composite based on superior performance.

IV. LITERATURE REVIEW

Past studies and experiments have been performed which attempted to assess training effectiveness of various programs of instruction. The problems associated with them are common to the problems associated with any measurement of behavior in the social sciences; that is, how to account for threats to external and internal validity. This section will provide an overview of previous studies as they pertain to the concepts of training effectiveness and efficiency.

A. TRAINING EFFECTIVENESS

Training is conducted with the intent of enabling a person to perform tasks and gain knowledge needed for the performance of a job at a later date. Kirkpatrick, (1985, p. 302) assesses the effectiveness of a training program at four different levels:

- o Trainee reaction to training.
- o Trainee learning during training.
- o Trainees change in behavior as a result of training.
- o Trainees productivity as a result of training.

While all four levels are important in an overall evaluation of training, behavior as assessed by actual job performance is a valid and significant indicator of training effectiveness. Vineberg, Joyner and Taylor (1978, p.2) suggest that training effectiveness is a function of the number of tasks taught and the resultant quality of performance. Other studies have elaborated on the complexity of training effectiveness as a function of characteristics of the individual, the characteristics of the programs of instruction and conditions of the workplace.

1. Characteristics of the Individual

Characteristics of the individual which influence job performance are ability, motivation and role perception. (Porter and Lawler, 1968 cited by Terborg, 1977, pp.188-216)

a. Trainee Ability

Porter and Lawler (1968, cited by Terborg, 1977, pp.188-216) included the characteristics of the individual in their model explaining job performance. Subsequent field studies have shown that, where ability test scores were used in selection decisions, there was relatively little support for the hypothesized relationship between ability and job performance. (Gavin, 1970; Lawler and Suttle, 1973; Vroom, 1960, p.189 cited by Terborg, 1977, p.189) This finding is supported by subsequent studies that show ability level of graduates...(of a training program) are...not related to fleet performance measures, but do have predictive power for school performance measures. (Freda, Hal, Ford, 1981, p.419)

The ASVAB minimum scores for selction to enlisted "A" schools have been shown to be good predictors for performance in training, but are less valid as predictors of actual job performance in the field. (Abellara, 1976, cited by Eitelberg, 1988, pp.80-81) Achievement in the cognitive realm does not ensure achievement in the performance realm. (Sullivan and Elenburg, 1988, pp.38-43)

b. Trainee Motivation

Motivation is the individual's desire to demonstrate a known behavior (or learn a new one) and reflects willingness to expend effort. (Muchinsky, 1987, p.446) There are numerous theories which attempt to model individual motivation. All have met with various degrees of empirical support, but no theory has received so much support that it can be declared the theory of motivation. (Muchinsky, 1987, p.484) A balanced perspective would indicate that there are personal traits and environmental variables which impact on an individual's desire to put forth effort in the accomplishment of a job, or even to learn how to perform the job in the first place.

c. Trainee Role Perception

Role perception is defined as the direction of effort on what action or behavior the individual thinks is appropriate for the task. (Porter and Lawler, 1968 cited by Terborg, 1977, p.188) This aspect of human behavior is unique to each individual and corresponds closely to the idea of merging individual judgment and motivational characteristics.

2. Characteristics of the Program of Instruction

Characteristics of the program of instruction which influence job performance include:

- o Training methodology.
- o Training validity.
- o Instructor expectations. (Goldstein, 1986, pp.88-106)

a. Training Methodology

Instructional methodology has long been thought to influence the effectiveness of a training program. Miner, Das and Gale (1984, pp.49-59) assessed three different training methodologies (case oriented, experiential and lecture) aimed at teaching organizational behavior. Their findings indicate there was no significant difference between the methodologies as measured by a final exam, a post exam (one month after course completion) or student satisfaction with the course. They recognized a threat to the external validity of their model in the amount of effort spent reviewing each other′s course material and test instruments, which could have attenuated some of the "natural" differences between the methods.

A mail survey of training experts conducted by L.L. Neider (1981, pp.24-30) ranked training methods by the criteria of satisfying a particular objective. The results of the survey indicate lecture and programmed instruction were regarded as the most effective methodologies with respect to knowledge acquisiton, with lecture ranking ahead of programmed instruction in the areas of changing attitudes, problem solving skills, interpersonal skills and participant acceptance. Programmed instruction ranked ahead of lecture in knowledge retention. Whatever the training or teaching methodology, learner involvement may be a key variable in training effectiveness. Esbeck (1984, pp.71-83) proposes that the learner's involvement in the learning process affects his productivity in much the same way that a worker's increased participation and responsibility in production in the company results in a significant improvement in productivity.

Training methodology also includes the variable of time. The amount of time spent learning a task and time between practice sessions are significant determinants in skill acquistion and retention. Goldstein (1986, p.83) citing Underwood (1964) has shown that massed practice is better than spaced practice for acquisiton (of verbal skills), but poorer for retention. The literature indicates that distributed practice utilizing reasonable rest periods is the favored technique for optimization of performance. (Goldstein, 1986, pp.80-87)

b. Training Validity

In order for training to be effective, trainees should be using the skills, knowledge and attitudes that are developed in training, in the transfer setting. (Goldstein, 1986, p.88) With on-the-job training, the training and transfer setting are identical and positive transfer has been shown to occur when task stimuli and required responses are identical in both settings. (Holding, 1965, p.90 cited by Goldstein, 1986) However, most training and transfer settings are not the same and the degree of congruence between the task stimuli and the required response in both settings is a measure of the training validity of the program.

c. Instructor Expectations

A significant factor in the success or failure of any training program is the instructor. Eden, Ravid and Shani (1982, cited by Goldstein, 1986, p.106) performed controlled experiments that indicated that inducing high expectations of students in trainers enhances trainee performance. This relates closely to the motivational qualities of the instructor.

3. Conditions of the Workplace

Conditions of the workplace include supervisor support, feedback and rewards. (Kirkpatrick, 1985, pp. 302-319) The trainee will walk away from the course of instruction ready, willing and able to perform his job at a given degree of proficiency. The conditions of the workplace will either enable or disable the trainee to carry out his duties by the support, feedback and rewards available. Studies dating back to the Hawthorne Effect in 1930 account for increases in productivity as a result of personal attention paid to workers by their supervisors. (Dwyer, 1977, p.8)

B. TRAINING EFFICIENCY

While this paper deals primarily with training effectiveness, the efficency of training in relation to learning achieved and program cost is important enough to be addressed in this chapter.

Studies of training efficiency have found that when comparing on-the-job training (OJT) to structured training programs, OJT is not as efficient in teaching employees necessary skills. (Kainer, Begley, Maggard, 1983, pp.84-95) They further show that OJT is the least efficient training methodology available in history.

Marcus and Quester (1986, p.13) measured net productivity of a United States Navy trainee as the contribution of the trainee less the loss in productivity of the trainer in the training process. They found that when camparing "A" school and striker training with this research methodology, "A" school training was more cost efficient as a result of a greater net productivity associated with "A" school graduates. The productivity assessments were made on the basis of supervisor ratings which compared strikers and "A" school graduates to an average four year rate specialist in the Navy.

A previous Coast Guard study (Langholtz, 1979, pp.66-67) found the opposite to be true in a cost analysis of resident versus correspondence training in the MK rate. Correspondence training was found to be a less costly method of training to the E4 level of proficiency.

C. SUMMARY OF LITERATURE REVIEW

Training effectiveness is a complex issue with numerous significant variables. The task of assessing the effect of the independent variables has been attempted by many in the past, with a variety of resultant findings. Researchers have had to use the measures of effectiveness available to them and attempt to account for the threats to validity inherent in each model.

The next section will develop a research methodology that takes account of the variables that are characteristic of each training program and which may account for some of the variability in the effectiveness of each program of instruction. The variables which account for training program effectiveness and are not inherent in the actual training method will also be assessed in relation to the threat to validity they pose to the model.

V. RESEARCH METHODOLOGY

The comparative methodology for this study was based on the strategy of performing secondary archival research of the USCG Performance Management Information System (PMIS). As pointed out in the last two chapters, job performance was dependent, in some part, on the initial rate training received, which enables personnel to perform the tasks that make up the job. The relative effectiveness of the training methods used to incorporate basic rate skills, knowledge and abilities in the Coast Guard enlisted personnel can be measured using the criteria of performance evaluations and rate of advancement.

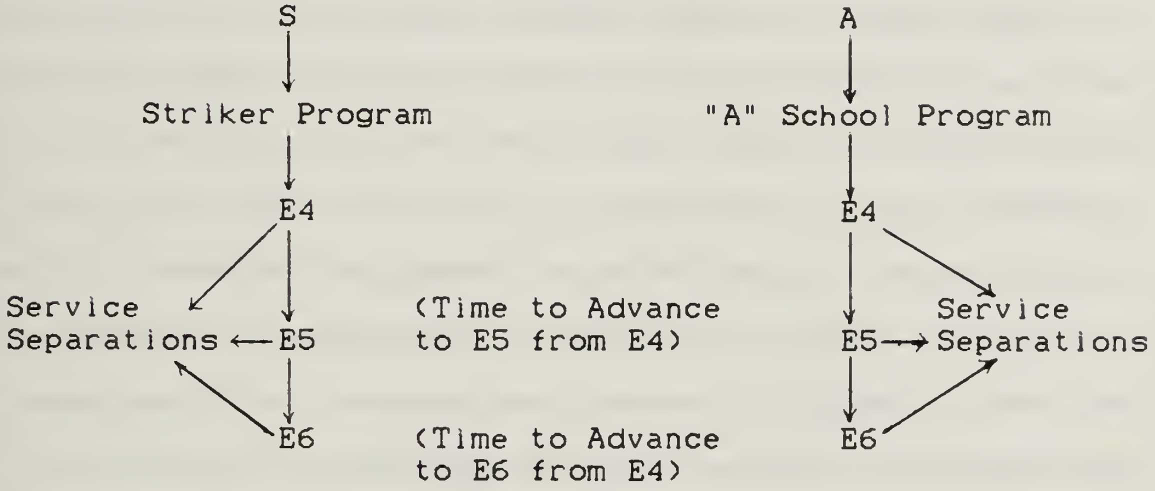
This chapter will outline the research model used in the study, specify the data to be collected, assess threats to validity and the scope of the methodology.

A. STATIC GROUP COMPARISON

The model used in this study was based on a static group comparison and is shown in Table 3. Enlisted personnel currently in the database were sorted by rate and training method and then again by paygrade. To control for variance in job performance as a function of the variance in aptitude, a range of ASVAB composite scores was defined which contained an appropriate mix of "A" school and striker graduates. The data from these records were used to make subsequent comparisons between the groups.

ADVANCEMENT MODEL

TABLE 3



B. DATA

With records selected for each training method and sorted by rate, paygrade and ASVAB subtest composite range, data was then extracted and used as criteria to evaluate differences in job performance between the groups.

1. Enlisted Performance Evaluations

The Enlisted Performance Evaluation (Appendix C) is conducted twice yearly for all Coast Guard personnel E4-E6.

It is a behaviorally anchored rating scale from one to seven and measures six composites of human behavior. While all six components are significant with respect to the overall productivity of the individual, only the work factor can be linked with any confidence to the initial rate training program the individual encounters. The work factor is broken down into eleven rated categories including knowledge, determining priorities, using resources, monitoring work, guidance required, keeping supervisor informed, workmanship, meeting deadlines, learning from experience, observing safety practices and stamina. While some of these may not be dependent upon training method, it is the best overall measure currently available to assess job performance. The work factor score is determined by the member's supervisor and has a range of 11 (lowest performance) to 77 (highest performance). The form has been designed so that the majority of Coast Guard personnel will be described by the characteristics in blocks 3 to 5. Again, since the assignment process is random, there is no expected bias in the use of this instrument as a measure of job performance.

The work factor was extracted from all records for each paygrade and compared, e.g., work factors for all MK2 (E5) personnel, work factors for all BM3 (E4) personnel. A separate variance T-test was used to assess if a significant difference in average job performance exists between the groups as measured by the work factor of the enlisted evaluation system.

2. Rate of Advancement

The rate of advancement is defined as the length of time required for an individual to attain a higher rate. The advancement process, previously detailed in section II.C., is characterized by a servicewide competition and a number of performance hurdles.

Each record was polled to determine the length of time taken to reach each paygrade from the initial attainment of E4; e.g., if the record of an E6 was in the BM "A" school population, then the length of time taken to attain E5 was used in determining the average time to advance to E5 within the BM "A" school graduate population. This average rate of advancement was then compared to the average rate of advancement for the BM striker population to determine if a significant difference exists.

C. THREATS TO INTERNAL VALIDITY

1. Selection Bias

Acceptance to "A" school is contingent upon a minimum ASVAB subtest composite score as detailed in Table 1. Any differences in job performance as a result of teaching methodology would be difficult to analyze due to selection bias present in the system. This effect is attenuated by selecting groups which are comparable in aptitude as measured by the ASVAB minimum set for "A" school selection. It is assumed that there are strikers who met the minimum ASVAB requirements for "A" school, but decided to strike the rate at their unit rather than attend a formal school. The aptitude differential between groups could have an impact on servicewide exam performance which accounts for 44% of the SWE composite that is used in the advancement process. With aptitude controlled, the behavioral differences between the groups can be attributed in greater weight to the different teaching methodologies to which each group is exposed.

2. Motivation

There are several theories which attempt to describe the sources of human motivation ranging from the satisfaction of basic needs to expectancy/valence which attempts to account for both intrinsic and extrinsic factors. Varying levels of motivation will affect personnel behavior at all levels beginning with the learning process during training and continuing to job performance in the field. Data which relects the differences in motivation in personnel are not currently available. For the purposes of this study, it is assumed that since all personnel are assigned without bias following the attainment of E4, the external motivation resulting from the individual's environment (i.e., supervisor's characteristics, work conditions) is distributed equally through both groups. There are no assumptions made regarding the distribution of intrinsic motivation within each group. It could be that strikers, since they are involved in a self-paced curriculum, are more self-motivated which could be a significant variable affecting job performance and rate of advancement. This will be addressed again in the conclusion.

3. Experimental Mortality

This study does not include members who separated from the service during the period of the study. While it may not be a factor, one group or the other could be experiencing significant mandatory separation rates due to unsatisfactory performance. If those members are no longer part of the comparison groups, (assuming they were in the initial comparable ASVAB criteria range) the findings could be skewed from the loss of low end observations and will be less indicitive of the true population behavior. Since the starting point of the study is the attainment of E4, no data have been obtained on the dropout rate from the striker program as compared to the "A" school programs. This is more a measure of the efficiency of the program than it is of the effectiveness, but would provide a more descriptive picture of the overall implementation of both training programs.

4. Sample Contamination

While on the "A" school waiting list, it is likely that some members are gaining rate experience at their parent unit. This gives them a base of practical experience in the field which enables them to incorporate more of the training they receive at "A" school. Thus, some "A" school graduates will be contaminated by on-the-job training previously received in that rate. There are no records to account for the experience level of the entry level "A" school trainee. It is rare for an "A" school dropout to successfully strike the rate.

D. SCOPE OF METHODOLOGY

This study is based on a methodology of behavioral comparison and is intended to be used as an indicator of the relative effectiveness of the two primary enlisted rate training methods. It does not attempt to analyze the implementation of the training programs at a micro level. Rather, there are general statements made regarding the characteristics of each training method. There is also no attempt to attach program costs to each training method, although a cost effectiveness study of training would certainly be a viable area for follow-on research.

VI. DATA AND ANALYSIS

Data from CG PMIS was collected on current active duty personnel. Criteria previously described were applied to 6,200 observations which resulted in 1,264 observations that were further sorted by rate, rank and training methodology. Data from the resultant observations were then compared to determine if differences existed for average work factor or for rate of advancement as a function of training methodology.

A. AVERAGE WORK FACTOR

The average work factor represents the average mark obtained within the work factor composite of the Enlisted Performance Evaluation form for all marks given in three marking periods (Fall 1987, Spring 1988 and Fall 1988). The data analyzed represent one aspect of rated job performance of those individuals who met the criteria for the comparison. One problem encountered in the data analysis was the number of missing values associated with this factor from the database. In many cases, the 1,264 observations which qualified for the comparison, based on previously described criteria, did not have enlisted evaluation marks and were treated as missing values. It is assumed that the missing values are randomly distributed between the two populations and does not have a significant impact on the results of the comparison. In other words, the data presented should be representational of the complete data set and not create a concern for validity of the comparisons to the "true" behavior of the populations.

1. Results of Average Work Factor Comparison

Table 4 details the results of T-test procedures applied to the data. The null hypothesis assumes that the average work factor is equal for both groups. The results of the T-tests indicate that the null hypothesis cannot be rejected. In other words, there is no significant difference in average work factor between the two groups across rates at either the E4 or E5 level.

2. Discussion

The results of equal average work factor between the groups were expected for the following reasons:

a. Expected Range of Performance

Performance standards detailed in the Enlisted Performance Evaluation form (Appendix C) are designed so that the majority of personnel being evaluated will fall between 3 and 5. With this "expected" range thus established, evaluators may be reluctant to give marks outside the range unless a person's performance is truly exceptional in one direction or the other.

b. Common Minimum Performance Criteria

Both groups are trained towards a set of common minimum performance criteria established in the EQCM. If both groups are actually attaining rate knowledge and skills according to the established criteria, they should be evaluated on-the-job as exhibiting the average behavior described for each mark, if positive transfer is taking place.

The true comparison of effectiveness of training programs would be better established if data were obtained for personnel who left the service after attaining rate. Inadequate marks are one criterion for discharge from the Coast Guard for unsatisfactory performance. Of course, those people who have attrited may have contributed to an increased differential between the average marks for the two groups which might indicate a performance difference as a result of training method.

AVERAGE WORK FACTOR MARK

TABLE 4

RATE/ RANK	METHOD	N	MEAN	STDDEV	T[1]	DF	PROB>1T1
BME4	A	29	4.4[2]	.42	0.23	45	.82
	S	18	4.4	.52			
BME4	A	12	4.6	.31	-1.07	27.0	.30
	S	17	4.7	.53			
DCE4	A	2	4.1	.31	-0.67	6	.37
	S	6	4.3	.27			
DCE5	A	2	4.2	.07	-1.32	6	.23
	S	6	4.5	.40			
EME4	A	8	4.4	.53	-0.67	7	.53
	S	1	4.7	-			
MKE4	A	42	4.4	.59	0.89	44	.38
	S	4	4.1	.65			
MKE5	A	21	4.7	.50	-0.38	22	.71
	S	3	4.9	.44			
QME4	A	11	4.4	.62	-0.41	10	.69
	S	1	4.7	-			
SKE4	A	13	5.0	.42	-0.13	16	.90
	S	5	5.0	.48			
SKE5	A	6	5.3	.40	1.48	7	.18
	S	3	4.8	.62			
SSE5	A	5	4.8	.09	-3.19	4	.03
	S	1	5.1				
YNE4	A	5	4.6	.45	1.94	4	.12
	S	1	3.6	-			
YNE5	A	5	5.3	.62	1.02	7	.34
	S	4	4.8	.84			

---

[1] T-Tests for unequal variance based on F-Test results.
[2] Average Work Factor.

A larger sample size would increase the power of these tests and also decrease the possibility that one outlier would skew the results. The SS E5 comparison of striker and "A" school methods only uses one striker mark and five "A" school marks and shows a significant difference at the .05 level of test significance. But with only one striker mark, there are too many explanations available to account for this differential that have nothing to do with training method. As a result, the comparisons with larger sample sizes are more credible and are more likely to be representative of the "true" behavorial differences between the groups as a result of training method.

Previous studies have shown that aptitude does not necessarily predict actual job performance. Used in conjunction with the results of this comparison, it would seem likely that the criteria of minimum ASVAB composite required for "A" school used in this study could be relaxed and the T-test comparisons would again result in no significant difference in rated performance as a function of training methodology. The ASVAB selection criteria becomes more important in relation to the rate of advancement comparison in the next section.

B. AVERAGE RATE OF ADVANCEMENT

The average rate of advancement represents the average number of days taken to advance to E5 from the attainment of

E4. Of the strikeable rates, only four are comparable due to population size constraints.

1. Results of Average Rate of Advancement Comparison

Table 5 details the results of the T-test procedures applied to the data. The null hypothesis assumes that the average rate of advancement is equal for both groups. The results of the T-test are:

- There is a significant difference in the rate of advancement to E5 in both the BM and MK rates at the .05 level of test significance (strikers advance almost twice as fast as "A" school graduates).
- There is no significant difference in rate of advancement to E5 in either the SK or YN rates at the .05 level of test significance.
- The distribution of advancement rate for the BM "A" school population is bimodal whereas the BM striker population exhibits a normal distribution. The remaining rate distributions are difficult to characterize due to low number of observations.

2. Discussion

The differential rate of advancement could result from the effects of a variety of influences. A review of advancement criteria detailed in section II. C. shows that rate of advancement is dependent upon:

- Minimum performance qualifications (to qualify to participate in SWE competition).
- Composite SWE score.
- Time in service.
- Time in rate.
- Medals and awards.
- Needs of the service.

With these criteria in mind, the following points may explain why an advancment rate differential exists in the BM and MK rates and not in the YN and SK rates.

AVERAGE RATE OF ADVANCEMENT TO E5 FROM E4

TABLE 5

RATE	METHOD	N	MEAN	STDDEV	T	DF	PROB>1T1
BM	A	24	1064[1]	510.3	3.75[2]	34	.0007
	S	43	629	330.1			
MK	A	64	1070	454.3	3.41[3]	69	.0011
	S	7	468	312.5			
SK	A	14	967	370.0	1.30[3]	20	.2096
	S	8	761	337.4			
YN	A	22	981	428.2	-0.82[3]	25	.4203
	S	5	1144	226.6			

---

[1] Mean number of days to advance to E5 after attaining E4.

[2] Assume unequal variance as result of F-Test.

[3] Assume equal variance as result of F-Test.

a. Mechanical Skill Transfer

The mechanical skills required to perform jobs in the BM and MK rates may be more effectively taught and transferred from the OJT setting to the workplace in a self-paced striker program than they are in a formal "A" school setting. If a majority of the practical factors required for advancment are mechanical in nature and mechanical skills are taught more effectively in a more interactive, on-the-job training environment, then strikers may be ready to take the SWE sooner than "A" school gradutes as a result of getting their practical factors signed off at a faster rate.

Within the SK and YN rates, there may not be a distinct advantage from teaching clerical or organizational skills in a self-paced striker program in relation to a formal school setting. Both programs may produce graduates who have the same capability for completing practical factors required for SWE competion and advancement to the next rate.

b. Learning Methodology Transfer

The nature of the striker program prepares those who successfully complete the program to continue to advance their knowledge and skills in the same way they are accustomed, i.e., self-paced, correspondence work to complete required courses and learning skills on-the-job. "A" school graduates are accustomed to classroom learning and a controlled teaching environment. They must adopt a different learning strategy to advance to E5 both in signing off practical factors and in competing in the SWE. Strikers have previous experience with the SWE as a criteria for advancement to E4. Again, this factor may be more significant in an environment requiring mechanical skills to complete tasks than in an environment which requires more knowledge and administrative procedure skills for task completion.

c. Duration of Instruction

The length of time taken to develop a conceptual framework and acquire basic rate skills may provide an advantage to strikers who have no established course duration. Consequently, with the striker "curriculum" spread over a longer period of time, they may be able to more effectively incorporate their training in a conceptual framework which assists them in acquiring new skills and knowledge in their career. They also may be working on E5 practical factors as a part of their striker duties. This could give them a head start over comparable "A" school attendees who are being taught only to the E4 rate criteria set in the EQCM, in as short a time duration as possible. This logic does not account for the insignificant difference in rate of advancement for the SK and YN rates.

d. Service Experience

As shown in Table 6, the striker population has a mean time in service at the point of attaining E4 which is greater than "A" school graduates for all rates compared. While this difference is only significant for the BM rate because of the spread of the data and the relatively small number of observations, the Time in Service (TIS) variable does count towards 11% of the total SWE composite score used for advancement. More time in service could also increase the general experience base of striker candidates. It should be noted that the pay base date was used for the members entry date to the service. Some observations were questionable because of the length of time taken to achieve E4 (i.e., some took eight years) but they were included in the calculations because it was deemed possible to take that long to make E4 in some cases and also there was no way to tell if the member had interrupted service from the data analyzed.

e. Motivation

If either group is more motivated to perform their jobs or advance as a result of personal or external factors, they may show significant differences in behavior. Intrinsic motivation is difficult to quantify. No assumptions are made about this variable in relation to which group could be "more" motivated to advance.

AVERAGE TIME IN SERVICE AT E4

TABLE 6

RATE	METHOD	N	MEAN	STDDEV	T	DF	PROB>1T1
BM	A	24	1221[1]	480.0	-2.38[2]	65	.0203
	S	43	1491	424.0			
MK	A	64	1145	702	-1.89[3]	65	.1038
	S	7	2009	1184			
SK	A	14	1256	786	-1.44[2]	20	.1661
	S	8	1837	1108			
YN	A	22	1381	791	-1.82[2]	25	.0809
	S	5	2140	1073			

---

[1] Mean number of days to advance to E4 from pay base date.

[2] Assume equal variance as result of F-test.

[3] Assume unequal variance as result of F-test.

f. Unit Familiarity

Strikers may be more likely to stay at the unit where they received OJT, which could give them an advantage over "A" school graduates in relation to knowledge they already have concerning unit processes and being familiar and secure in the work environment. "A" school graduates may require a higher output of time and effort to just get in the groove of a new unit. They may not be able to apply as much of their personal resources towards advancement as soon as a striker who could immediately continue with his advanced learning after attaining E4. Data concerning this variable were not attained, but if it were significant, it seems likely that it would affect the YN and SK rates in much the same way that it affects the BM and MK rates. This effect is not apparent from this study.

VII. CONCLUSION AND RECOMMENDATIONS

A. CONCLUSION

This study has reached three basic conclusions:

- There is no significant difference in rated work performance between graduates of "A" school and striker programs.
- There is a significant difference in rate of advancement to E5 between "A" school and striker program graduates in the BM and MK ratings. Strikers advance at almost twice the rate of "A" school graduates.
- There is no significant difference in rate of advancement to E5 between "A" school and striker program graduates in the SK and YN ratings.

It is a risky proposition to make sweeping generalizations about program effectiveness in relation to job performance. The model specified and the variables used must be assessed along with the findings to gain a more precise picture of true behavior.

There are many bottom lines that the Coast Guard must assess when looking at training; including the desired outcome, cost effectiveness and efficiency of the training programs.

With the available data, this paper has assessed the effectiveness of the current initial rate training programs in the Coast Guard in relation to job performance and productivity. It could be argued that a faster rate of advancement correlates with increased productivity. With advancement comes increased responsibility, greater skill level and increased job efficiency and effectivenss. In general, we want our personnel to advance as quickly as possible while being competent and effective on the job. With this in mind, the next questions should be:

- What is the cost effectiveness of "A" school compared to striker programs?
- Can more efficient and standardized striker programs be developed?
- Are "A" schools preparing their trainees to advance, or only to perform at the E4 level of expertise?

B. RECOMMENDATIONS

The following recommendations are made with reference to further study in the area of training program effectiveness.

1. Cost Effectiveness Study

Perform a cost effectiveness study evaluating performance as a function of rate training method, minimum ASVAB composite and training duration. This could present findings which relate to the next recommendation.

2. Establish Standards and Improve Efficiency

Establish standards and improve the efficiency of the striker programs. It is difficult to speculate on the efficiency of the variety of striker programs being implemented in the Coast Guard, but observations indicate that strikers are generally on their own with reference to the lessons they set themselves up to receive. Some units have extremely well documented curriculums for strikers and other are ad hoc. The Coast Guard could develop a pilot program for strikers using computer-aided instruction or interactive video which could help standardize the knowledge and skills all E4's in a particular rate should possess. This might also bypass the variability of effectiveness of on-the-job trainers who have not necessarily had instructor training.

3. Perform External Evaluations

Perform external evaluations of striker programs in the same way they are currently being used for "A" schools. This will give a better assessment of accomplishments and deficiencies of the two training methods.

4. Review Selection Criteria

Review selection criteria for "A" schools. If strikers and "A" school graduates have the same performance evaluations and strikers actually advance faster than their "A" school counterparts of comparable aptitude (BM and MK rates), then they may actually be able to perform adequately in a classroom setting. Since the ASVAB is supposed to predict performance in the classroom, a comparison of "C" school performance for both groups might be enlightening in the determination of the utility of an ASVAB composite criteria for selection to attend "A" school.

5. Prepare Graduates to Transition Process

Prepare "A" school graduates for the transition to a learning environment that requires self-motivation and is based on job site training instead of formal instruction. This may not be a problem with rates in which the "A" school learning environment is very similar to the learning environment in the field, but some training methodologies may not transfer well at all. If the "A" school graduates are prepared to learn in a more interactive way on-the-job, they may acquire skills and knowledge at a faster rate and subsequently advance more quickly.

The preceding recommendations are no way intended to slight the efforts of anyone in the Coast Guard training community. The Coast Guard prepares its personnel to perform their jobs well and this study asks questions with the intent of improving our service′s effectiveness and our personnel′s job satisfaction.

APPENDIX A

RATE AND GENERAL TASK AREAS

RATE	GENERAL TASK AREAS[1]
Boatswains Mate (BM)	Operation and navigation of small boats, store cargo, handle ropes and lines.
Damage Controlman (DC)	Welding, firefighting, pipe-fitting, woodworking, shore facility maintenance.
Electricians Mate (EM)	Operation and repair of electrical power plants and equipment.
Machinery Technician (MK)	Operation and maintenance of engines, steering and propulsion systems.
Quartermaster (QM)	Ship navigation and signaling.
Storekeeper (SK)	Provision and accounting for supply of clothing, spare parts and commissary items.
Subsistence Specialist (SS)	Prepare crew meals and procure mess supplies.
Yeoman (YN)	Maintain personnel and unit records and prepare correspondence.

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[1] The general areas are not intended to be inclusive of all tasks performed within each rate, but rather an indicator of the primary focus of each rate.

11-85

RECORD OF PRACTICAL FACTORS
EM

PRIVACY ACT STATEMENT

CG-3303 RECORD OF PRACTICAL FACTORS

In accordance with 5 USC 552a(e)(3), the following information is provided to you when supplying personal information to the U.S. Coast Guard

1 Authority which authorized the solicitation of the information 14 USC 352

2. Principal purpose(s) for which information is intended to be used To record completion of practical factor requirements by Coast Guard Regular and Reserve enlisted personnel for advancement eligibility.

3. The routine uses which may be made of the information To provide a record of proficiency in each practical factor demonstrated for advancement to the next higher rate.

4. Whether or not disclosure of such information is mandatory or voluntary (required by law or optional) and the effects on the individual, if any, of not providing all or any part of the requested information: Disclosure of the information is voluntary, but non-disclosure may result in disqualification of eligibility for advancement to the next enlisted rate

INSTRUCTIONS

ALL PERSONNEL

CG-3303C shall be utilized to record the completion of practical factor requirements by enlisted personnel of the Coast Guard and Coast Guard Reserve as outlined in the Enlisted Qualifications Manual, COMDTINST M1414.8 (old CG-311)

As proficiency in each practical factor is demonstrated, an entry is to be made in the DATE and INITIALS columns

Waiver of individual requirements shall be noted in the remarks section. Do not date and initial waivered requirements

Practical factors added by amendment to COMDTINST M1414.8 (old CG-311) shall be entered in the spaces provided

CGR (INACTIVE DUTY) PERSONNEL

Prior to commencement of ADT, the member's Reserve Unit shall indicate, by circling in red, those factors which cannot be completed during inactive duty and should be completed on ADT.

RATING ELECTRICIAN'S MATE
ABBREVIATION EM
USCGR (INACTIVE DUTY) PERSONNEL
DATES OF COMPLETION OF PRACTICAL FACTORS CHECKOUT FOR RATE LEVEL
E-4
E-5
E-6
E 7
E 8
E 9
RESERVE UNIT NO
LOCATION

PRACTICAL FACTORS	COMPLETED	
	DATE	INITIALS

G 2 ELECTRICIAN'S MATE (EM), GROUP III RATING-ENGINEERING AND HULL

SCOPE

Electrician's Mates stand watch on motors, generators, switchboards, and control equipment, operate electrical equipment, maintain and repair power and lighting circuits, electrical fixtures, motors, generators, distribution switchboards, and other electrical equipment; test for short circuits, grounds, or other casualties, and repair and rebuild electrical equipment in an electrical shop

QUALIFICATIONS FOR ADVANCEMENT

1.000 Practical Factors

A FUNDAMENTALS OF ELECTRICITY AND ELECTRONICS

401 Interpret schematic diagrams of electrical circuits including basic solid state circuits
402 Operate the following standard test equipment used in servicing electrical and electronic equipment
  a Voltmeter
  b Ammeter
  c Wattmeter
  d Multimeter
  e Ohmmeter
  f Megger.
  g Frequency meter
  h Phase-sequence indicator
  i Power-factor meter
  j. Thermocouple instrument
  k Transistor tester
  l Stroboscopic tachometer
  m Clamp-on-ammeter
  n Oscilloscope and associated equipment
403 Test internal circuits of electrical equipment for continuity, short circuits, and grounds
404 Measure electrical quantities such as voltage, current, and resistance and compare with established values
405 Evaluate test equipment for correct operation, make AUTHORIZED repairs and calibrations according to manufacturer's instructions
406 Convert degrees celsius to degrees farenheit and vice-versa
501 Operate an Instrument Transformer used in servicing electrical and electronic equipment
502 Use an oscilloscope to view circuit waveforms, and compare with established optimum performance waveforms required in electrical equipment
503 Demonstrate correct servicing procedures for
  a Diodes, transistors, silicon-controlled rectifiers, thermistors and printed circuit boards
.504 Operate the following standard test equipment used in servicing electrical and electronic equipment
  a Ground fault meter
  b Voltage tester

B CIRCUITS, WIRING, AND CABLES

401 Using proper procedures and equipment, locate and replace blown fuses
402 Solder electrical connections and splices
403 Isolate individual circuits in electrical distribution system
404 Select correct types and sizes of wire and insulation for various application
405 Accomplish the following maintenance on circuit breakers:
  a Lubricate bearing point and bearing surfaces, including latches
  b. Clean all surfaces, with a dry cloth, blower, or vacuum cleaner, using approved methods
  c Inspect the sealing surfaces of contactor and relay armatures and pole faces to see that they are clean, free from rust, and seated properly
.501 Accomplish the following maintenance on circuit breakers.
  a Check and replace pins, bearings, latches, and contact or mechanism springs where excessive wear, corrosion, or overheating is evidenced
  b Inspect trip shafts, toggle linkages, and all other mechanical parts to see that they operate freely and without binding
  c Inspect mechanical and electrical connections, including mounting bolts and screws; draw-out disconnect devices and control wiring
  d Remove and replace circuit breakers
502 Detect, locate, and repair grounds, open circuits, and short circuits in degaussing systems
601 Remove, test, and replace defective components in automatic degaussing control panels

C MOTORS AND GENERATORS

401 Examine running motors and generators for vibration, unusual or excessive noise, heating, and lubricant leakage
402 Detect and locate grounds, open circuits, and short circuits in AC and DC motors and motor controllers
403 Clean and lubricate electric motors and motor-generator sets
404 Remove from the line and secure
  a A single AC generator connected to a bus
  b A single DC generator connected to a bus
  c A DC generator which has been operating in parallel with another generator
  d An AC generator which has been operating in parallel with another generator
405 Start and put on the line
  a DC generators for parallel operation
  b A DC generator to its bus for nonparallel operation
  c An AC generator to its bus for nonparallel operation
  d AC generators for parallel operation
406 Set up an emergency generator for automatic operation
407 Measure insulation resistance of alternators, generators, and motors
408 Inspect for and correct deficiencies in brushes, such as (IAW manufacturer's instructions)
  a Brush pigtails
  b Brush alignment and distance
  c Brush holders
  d Brush pressure
409 Replace bearings in motors generators
410 Service AC and DC motor controllers including
  a Replacing contact tips, contactor assemblies, solenoid coils, overload relays, and wiring
  b Adjusting overload and time-sequence relays, contact gaps, and contact pressure
  c Bench testing for proper operation
501 Inspect and correct deficiencies in
  a Commutators
  b Collector rings
502 Undercut armature commutators
503 Perform tests, adjustments, and repairs on electromechanical servomechanisms and synchro circuits including
  a Zeroing of synchros

NAME (Last First Middle Initial)
SOCIAL SECURITY NUMBER
PRESENT RATE

PRACTICAL FACTORS — COMPLETED: DATE | INITIALS

- b Testing of servomotors and amplidynes.
- c. Making phase and balancing adjustments.

.601 Detect, locate, and repair grounds, open circuits, and short circuits in ship's service and emergency generators and associated switchgear.
.602 Inspect and test-operate automatic starting equipment of emergency generators.
.603 Operate and maintain AC and DC ship propulsion equipment
.604 Inspect, test, and adjust voltage regulators

D. ELECTRICAL SYSTEMS - PROPULSION CONTROL, BATTERIES, APPLIANCES, INSTRUMENTS, AND FIXTURES

.401 Replace storage and dry cell batteries
.402 Replace worn gaskets and seals on watertight electrical fixtures
.403 Repair portable electric tools, portable lights, fans, and appliances by:
- a Testing component parts for grounds, open circuits, and short circuits.
- b. Cleaning electric contacts and windings or elements.
- c. Replacing defective cords, plugs, switches, elements, and worn brushes, bearings and bushings etc

.404 Maintain the following electrical systems on small boats:
- a Ignition (gasoline engine)
- h. Starting heater circuit (diesel engine).
- c Lighting
- d. Starter
- e Generator and alternators.
- f. Voltage regulator.
- g Batteries.

.405 Conduct test discharge and various types of charges on storage batteries
.406 Place new storage batteries (in dry state) in service.
.407 Maintain and repair sound-powered telephones and circuits.
408 Maintain electric galley equipment (ranges, griddles, fry kettles, roasting ovens, baking ovens, etc.) by:
- a. Locating and repairing grounds, open circuits, and short circuits.
- b. Inspecting and insuring that proper cleanliness is maintained.

.409 Replace or repair defective lugs or connectors of storage battery cables.
.410 Maintain and repair portable and installed battery charging systems.
.411 Maintain IC equipment including call bell circuits.
.501 Maintain electric galley equipment (ranges, griddles, fry kettles, roasting ovens, baking ovens, etc.) by
- a Adjusting temperature controls and safety devices.
- b Replacing defective heating units, thermostats, safety devices, switches, relays, and wiring

.502 Maintain IC equipment including
- a Alarm and warning systems.
- b. Annunciators
- c Temperature indicating equipment.

.503 Operate manual and automatic degaussing equipment
.601 Maintain electrical and solid state propulsion control and auxiliary control systems such as consoles, governor controls, etc
602 Perform maintenance on plotters and associated dead reckoning analyzer and indicator (DRAI)
.603 Maintain synchro-amplifiers, underwater logs, dummy logs, dead-reckoning tracers (DRT), dead-reckoning analyzers (DRA), and wind direction and speed indicator systems
604 Maintain gyrocompass and repeater systems

E POWER AND LIGHTING EQUIPMENT

401 Operate, inspect, adjust, clean, lubricate, repair and test signal lights and searchlights
402 Test and repair running and anchor light systems
.403 Provide emergency power to main distribution board from emergency switchboard through feedback switch
404 Replace power and light cable aboard ship.
.405 Detect, locate, and repair grounds, open circuits, and short circuits in lighting power distribution cables
406 Connect shore power to main distribution board by observing proper procedures
.501 Install new power and lighting circuits
.502 Test ABT and MBT for proper operation
601 Remove, test, and install instrument transformers and meters on power and lighting switchboards and control panels.
602 Supervise and train personnel in operation, maintenance, repair, and safety precautions pertaining to power and lighting equipment
603 Estimate time and material needed for repair of power and lighting equipment
604 Maintain and repair ABT and MBT

F WATCHSTANDING

.401 Qualify as a watchstander on a DC ship's service generator and distribution switchboard
- a Visually scan the various switchboard meters and indicators to determine whether generator is operating properly

.402 Qualify to stand electrical watch at the following stations
- a Steering engineroom
- b Degaussing switchboard
- c Emergency switchboard
- d Bow thruster

.403 Quality to stand watch on an AC ship's service generator and distribution switchboard:
- a Visually scan the various switchboard meters and indicators to determine whether the proper load is being carried and the generator is operating properly
- b. Take and log readings
- c. Shift to standby automatic voltage regulator
- d Control voltage manually during emergency conditions
- e Maintain normal voltage
- f. Maintain normal frequency.
- g. Set up distribution board for general quarters condition.

.404 Qualify to stand watch on auxiliary boilers and equipment.
.405 Qualify to stand gyrocompass watch and be capable of starting, stopping, and performing adjustments for speed and latitude
.406 Qualify as a repair party electrician.
.407 Operate auxiliary equipment such as boilers, oily water separators, purifrers, etc.
.501 Qualify to stand watch on main propulsion-control switchboard
.502 Marntain auxiliary equipment such as borlers, oily water separators, purifiers, etc.
.601 Qualify to stand watch on main propulsion machinery.
.701 Qualify to stand senior engineering watch on board ship

G. SAFETY

.401 Demonstrate under simulated conditions the rescue of a person in contact with an energized electrical circuit, resuscitation of a person unconscious from electrical shock, and treatment for electrical burns
.402 Demonstrate safety precautions for servicing equipment aloft.
.403 Demonstrate safety precautions for rigging casualty power.
.404 Demonstrate ability to isolate equipment for repairs, including such safety precautions as tagging switches, removing fuses, grounding test equipment, and using the safety shorting probe.
.405 Demonstrate treatment of acid burns.
.601 Conduct electrical emergeney drills
.602 Train personnel in principles and practices of electrical safety

H. LOGIC

None.

I ADMINISTRATION

.401 Locate and use for maintenance and repair information
- a. Naval Engineering Manual (CG-413).
- b. NAVSHIPS Technical Manual.
- c. Manufacturer's Instruction Books
- d. Blueprints.
- e. Current supply system catalogs and microfiche
- f. CALMS - Combined Allowances for Logistics Maintenance and Support system.
- g. Locally prepared maintrenance check off sheets on PMS cards and records
- h. BOSS (Boat Outfit Support System)

.501 Locate, prepare use, and maintain records, reports, and publications used by the division
.502 Determine quarterly requisition requirements for the engineering department or your division.
.601 Prepare CSMP cards IAW district instructions
602 Prepare and maintain engineering reports, records, and files in accordance with the Naval Engineering Manual.
.701 Conduct departmental instructions
.702 Conduct on-the-job training within the division
.703 Estimate time, labor, and materials required for repair of machinery, structures, equipment, or systems
.704 Take charge and manage the engineering department on a small cutter or an engineering division or shop
705 Prepare shipyard availability work requests and schedules, serve as an inspector of shipyard work

SENIOR CHIEF ELECTRICIAN'S MATE (EMCS)

1.000 Practical Factors

.801 Provide to the engineer technical information and advice cerning capabilities, limitations, reliability, and operation of electrical systems and associated equipment.
.802 Direct operation and control of electrical distribution and interior communication systems and circuits
.803 Plan emergency drills for engineering personnel
804 Plan, organize, and direct work of personnel operating and maintaining electrical systems.
.805 Assist in planning projects to be accomplished by the engineering department during availabilities and supervise scheduled work
806 Train subordinate personnel in the procedures for preparing engineering reports and base or shipyard work requests, and for maintaining engineering records

MASTER CHIEF ELECTRICIAN'S MATE (EMCM)

1.000 Practical Factors

.901 Supervise personnel in the operation, maintenance, overhaul, procurement, and survey of electrical equipment
902 Collect, prepare, and disseminate technical information pertaining to testing maintenance, and repair of electrical and IC equipment and associated systems
.903 Prepare general correspondence concerning fiscal, supply, and administrative matters
904 Assist in the management of engineering records
905 Assist in the formulation of plans, policies, and budget requirements for the engineering department
.906 Prepare examinations for enlisted personnel in the technical aspects of the EM rating
.907 Advise subordinate personnel of new developments and new technical information concerning the capabilities, limitations, and employment of electrical propulsion and auxiliary equipment

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PRESENT RATE

PRACTICAL FACTORS	COMPLETED		PRACTICAL FACTORS	COMPLETED	
	DATE	INITIALS		DATE	INITIALS
ADDITIONAL FACTORS					
			If more space is needed for "ADDITIONAL FACTORS," use "REMARKS" space		

SIGNATURE OF SUPERVISING OFFICER

INITIALS	RATE/RANK	F I M I LAST NAME (PRINT)	SIGNATURE	UNIT	DATE

REMARKS

2. ELECTRICIAN'S MATE (EM)

GENERAL RATING

SERVICE RATINGS

None.

QUALIFICATIONS FOR ADVANCEMENT

2.000 Knowledge Factors

A. FUNDAMENTALS OF ELECTRICITY AND ELECTRONICS

.401 Methods and equipment used in electrical tests for continuity, grounds, and short circuits.

.402 Define and explain the theory of:
  a. Conductors and insulators, lines-of-force, field intensity, flux density, permeability, ampere-turns, hysteresis and eddy currents, self and mutual-induction, and electro- magnetic induction.
  b. Coulomb, volt, ampere, ohm, henry, circular mil, farad, and watt.
  c. Horsepower, power factor, and volt-ampere.
  d. Reactance, capacitance, inductance, and impedance.
  e. Torque, frequency, cycle, phase, and pulse.
  f. Ambient temperature.
  g. Ampere-hour.
  h. Common electrical and metric prefixes and units; milli, micro, kilo, mega, centi, meter, liter, gram, millimeter, centimeter, kilometer, kilogram, milliliter, etc.

.403 Explain electric installation identification systems aboard ship:
  a. Classification of circuits.
  b. Cable marking.
  c. Equipment marking.
  d. Panel marking.
  e. Switch marking.
  f. Phase and polarity marking.

.404 Explain the relationship of resistance, inductance, and capacitance in AC circuits.

.405 Explain the relationship of current, voltage, and impedance in AC circuits, including resonant circuits.

.406 Explain minority and majority current carriers in a P-N junction.

.407 Explain the function and theory of:
  a. Diodes.
  b. Transistors.
  c. Unit junction transistors.
  d. Silicon controlled rectifiers.
  e. Thermistors.
  f. Zener diodes.
  g. Light emitting diodes.
  h. Cathode ray tube.
  i. Diode tube.
  j. Triode tube.
  k. Thyratron.
  l. Triac.

.408 Calculate current, voltage, power, and resistance in DC series and parallel circuits.

.409 Calculate current, voltage, power, phase angle, impedance, and resonance in AC series and parallel circuits.

.410 Explain the function of the following in electrical circuits:
- a. Resistors.
- b. Rheostats and potentiometers.
- c. Solenoids.
- d. Inductors.
- e. Capacitors.
- f. Fuses.
- g. Switches.
- h. Transformers.
- i. Relays.
- j. Rectifiers.
- k. Magnetic amplifiers and saturable reactors.

.411 Explain the function and principles of basic transistor circuits including:
- a. Common base.
- b. Common emitter.
- c. Common collector.

.412 Describe the operating principles and components of the following:
- a. Primary and secondary batteries.
- b. Circuit breakers.
- c. Generators and alternators.
- d. Shunt motors.
- e. Series motors.
- f. Compound motors.
- g. Stabilized shunt motors.
- h. Controllers.
- i. Transformers.
- j. Single-phase motors.
- k. Induction motors.
- l. Synchronous motors.
- m. Electric brakes.
- n. Gyroscopes.

.413 Explain the relationship between farenheit and celsius temperature scales.

.414 Describe the methods and equipment used in electrical tests for voltage, current, and resistance.

.501 Describe the operating principles and components of the following:
- a. Automatic voltage regulators (AC and DC).
- b. Rotary amplifier-type motor generators.
- c. Magnetic amplifiers.

.502 Describe correct maintenance procedures for electron tubes and solid-state devices.

.503 Explain the function and principles of basic transistor circuits including:
- a. Bipolar amplifiers.
- b. Field effect amplifier (insulated gate).
- c. Power amplifier.
- d. Push-pull amplifier.

B. CIRCUITS, WIRING, AND CABLES

.401 Explain the relationship of resistance, temperature, size, and current in an electrical conductor.

.402 Explain the relationship of reluctance, flux, and magnetomotive force in AC and DC magnetic circuits.
.403 Describe the construction and types of shipboard electric cable.
.404 Relationship of current and voltage in wye, delta wye, and open-delta connections.
.501 Procedures for testing electrical safety devices (such as reverse power relay, reverse current relay, overspeed trip, and ground-current fault interrupter) for proper operation.

C. MOTORS AND GENERATORS

.401 Procedures for replacing batteries.
.402 Explain common operational faults of AC and DC motors, generators, and synchros.
.403 Explain procedures for starting and paralleling generators and switchboards, splitting plant, or securing generators.
.404 Explain procedures for flushing bearing housings of grease and oil from lubricated motors.
.405 Explain applications of the law of magnetism to DC motors and generators.
.406 Explain electrical and physical characteristics of electric motors, generators, alternators, and synchros.
.407 Explain types of insulating materials and varnishes and minor repair procedures.
.408 Explain procedures for checking mechanical and solid state controllers for proper operation.
.409 Explain the procedures for replacing bearings in motors/generators.

D. ELECTRICAL SYSTEMS - PROPULSION CONTROL, BATTERIES, APPLIANCES, INSTRUMENTS, AND FIXTURES

.401 Explain the principles of operation of DC main propulsion system.
.501 Explain the principles of ship control order and indicating systems including:
  a. Engine order telegraph system.
  b. Rudder angle indicator system.
  c. Shaft revolution indicator system.
.601 Explain the principles of ship control order and indicating systems including:
  a. Wind direction and speed indicator system.
  b. Underwater log system.
.602 Explain the principles of gyrocompass and related equipment including dead-reckoning equipment (DRA, DRI, DRT, etc.).
.603 Explain the principles of operation of electrical and solid state propulsion control and auxiliary control systems such as consoles, governor controls, etc.

E. POWER AND LIGHTING EQUIPMENT

.401 Explain the procedures for connecting casualty power cables.
.402 Explain the principles of operation, maintenance, and repair of searchlights and signal lights.
.403 Describe the normal, alternate, and emergency power-distribution systems for shipboard lighting and power distribution.
.501 Explain the procedures for test operation of automatic bus transfer switches.
.601 Explain the procedures for disconnecting and removal of instrument transformers and meters from switchboards.

F. WATCHSTANDING

.401 Explain the procedures for operating steering equipment in pilothouse and steering engineroom.
.402 Explain the starting and stopping procedures for gyro-compass systems.
.403 Describe the operation of auxiliary equipment such as boilers, oily water separators, purifiers, etc.
.501 Explain the procedures for normal and casualty operation of main propulsion switchboard.
.502 Explain the principles of operation and maintenance of auxiliary equipment such as boilers, oily water separators, purifiers, etc.
.601 Describe the inspections to be made on ship's service and emergency switchboard equipment when power is secured.

G. SAFETY

.401 Explain the precautions to be observed during removal of paint from or repainting of electrical equipment.
.402 Explain the precautions to be observed during cleaning of electrical equipment with appropriate approved cleaning solvents.
.403 Explain the effects of electrical shock; methods and types of resuscitation.
.404 Explain the electrical and electronic safety precautions.
.405 Describe the safety precautions of a repair party electrician.

H. LOGIC

.401 Identify and recognize truth tables for logic symbols: AND, NAND, OR, NOR, or complement.
.501 Explain the following principles or terms:
  a. Base two number system.
  b. Decimal to binary conversion.
  c. Addition and subtraction of binary numbers.
  d. Basic Boolean algebra and truth tables.
  e. Boolean expression for AND, OR, NAND, NOR, and complement.
.502 State the principles and functions of:
  a. AND and NAND gates.
  b. OR and NOR gates.
  c. NAND and NOR inverters.
  d. R-S Flip-Flop.
  e. Clocked R-S Flip-Flop.
  f. J-K Flip-Flop.
  g. Shift register.
  h. Binary counter.
  i. Astable multivibrator.
  j. Bistable multivibrator.
  k. Monostable multivibrator.
  l. Count detection decoders.
  m. Function detection decoders.

I. ADMINISTRATION

.401 Explain the purpose of engineering files and reports.
.501 Explain the procedures for maintaining inventory.

.601 Explain the procedures for obtaining replacement parts and supplies.
.701 Explain the duties and responsibilities for the EOW.
.702 Explain the procedures for managing a division, shop, or department.

SENIOR CHIEF ELECTRICIAN'S MATE (EMCS)

QUALIFICATIONS FOR ADVANCEMENT

2.000 Knowledge Factors

.801 Explain the capabilities, limitations, and functions of electrical systems and related equipment.
.802 Demonstrate knowledge of current Coast Guard and Navy publications concerning standards of electrical equipment.

MASTER CHIEF ELECTRICIAN'S MATE (EMCM)

QUALIFICATIONS FOR ADVANCEMENT

2.000 Knowledge Factors

None.

DEPARTMENT OF
TRANSPORTATION
U.S. COAST GUARD
CG-3788B (REV. 5-84)

ENLISTED PERFORMANCE EVALUATION FORM
PETTY OFFICER

INSTRUCTIONS

ALL: Review the Enlisted Qualifications Manual to determine the knowledge required of a rate or rating, or to what degree an individual should be able to apply such knowledge.

SUPERVISOR: Each item must be completed. Read the performance standards carefully. *They have been designed so that the majority of the personnel being evaluated will fall between 3 and 5.* If the evaluee's performance is exactly as described by one of the standards (block 2, 4, or 6), select that block. If the evaluee's performance falls below, between, or above any of the standards, select block 1, 3, 5, or 7, whichever is most appropriate for the evaluee's performance in relation to the standards. Place an "X" in the circle in the block selected. Marks of 1 or 7 require justifying comments.

MARKING OFFICIAL: Using the recommendations of the supervisor and other pertinent information on the evaluee, assign a mark (1–7) for each item by darkening the corresponding circle and entering the mark in the column provided to the right. Total the numbers in the "Mark" column. Enter all factor totals in space provided on page 1 and sign. Marks of 1 or 7 require justifying comments.

APPROVING OFFICIAL: Review the form and complete the Approving Official's section. Changes to marks not concurred in must be made in red. Draw a line through the darkened circle and the mark awarded. Initial the circle corresponding to the mark you are assigning and enter the new mark in the column. Compute the new total and correct the entry on page 1.

NAME *(Last,First,Middle)*	SOCIAL SECURITY NO.	RATE	UNIT AND DIVISION

REASON FOR EVALUATION: SEMIANNUAL ____________ OTHER *(Specify)* ____________ PERIOD ENDING ____________

SUMMARY OF EVALUATION MARKS:	MIL	TEAM	WORK	LDRSHP	REP CG	HUMAN	SIGNATURE OF MARKING OFFICIAL

MILITARY FACTOR: MEASURES AN INDIVIDUAL'S ABILITY TO LOOK AND ACT IN A MILITARY MANNER.

	1	2	3	4	5	6	7	MAR
1. GROOMING	○	Needs to be reminded to cut or groom hair. If beard or moustache worn, needs to be reminded to trim or groom them. Clothing and/or person needs cleaning. ○	○	Hair cut or groomed to standards. If worn, beard or moustache also neat and properly trimmed. Keeps self and clothes clean. ○	○	Is impeccably groomed. Hair, personal hygiene, and cleanliness clearly exceed standards. Sets example for others. ○	○	
2. UNIFORM	○	Uniform items ill-fitting or tend to be sloppy, soiled, in need of polishing, or improperly worn. ○	○	Presents good military appearance. Uniform neat, clean and properly worn. Brass, ribbons, footwear, cap, and devices highly polished or clean. Never wears non-regulation items. ○	○	Sharp military appearance. Uniform and all accessories always worn without a flaw. Insists on similar appearance from subordinates. Uniform serves as a model to others. ○	○	
3. CONDUCT	○	No CM, not more than one NJP. Not more than one civil conviction. Conformance to rules, regulations, and military standards is marginal. ○	○	No NJP, CM, or equivalent civil convictions since last evaluation. Promotes and supports respect for rules, regulations, and military standards. ○	○	No infractions of any sort. Enforces rules, regulations, and standards by all subordinates and within peer group. ○	○	
4. CUSTOMS AND COURTESIES	○	Fails to observe or respect basic principles of military customs and courtesies; discredits service. ○	○	Accepts, practices and teaches military customs and courtesies. ○	○	Has strong belief in military ideals; adheres closely to customs and courtesies; requires subordinates to do same. Brings credit to self and Coast Guard. ○	○	
TOTAL FOR MILITARY FACTOR (add items 1 through 4) ALSO ENTER IN THE SPACE PROVIDED ABOVE								

TEAM FACTOR: MEASURES HOW AN INDIVIDUAL AFFECTS OR IS AFFECTED BY OTHERS WITH WHOM HE/SHE WORKS.

	1	2	3	4	5	6	7	MAR
1. RESPECTING OTHERS	○	Shows disregard for feelings of others through inappropriate comments or actions. ○	○	Respectful; treats other in a courteous and thoughtful manner; respects their feelings and beliefs. ○	○	Actively contributes support to maintain an environment where all persons are treated respectfully and fairly. Insists on such treatment of others by subordinates. ○	○	
2. COMMUNICATING WITH OTHERS	○	Has difficulty expressing self or understanding others. Uses foul or abusive language. ○	○	Able to get point across; makes it a point to understand others. Ability to communicate contributes to team effort. ○	○	Articulate at expressing self to individuals or groups; skillful at understanding others. Actively promotes open communications; puts others at ease and draws out their suggestions/comments. ○	○	
3. WORKING AS TEAM MEMBER	○	Burden on group; doesn't do own share of work. ○	○	Good team worker, helps others; carries own share of load; contributes ideas. ○	○	Outstanding team worker; takes on extra duties. Ideas and recommendations sought by others. Takes active role in making team effective and productive. ○	○	
4. CONTRIBUTING TO TEAM EFFORT	○	Seldom cooperative; causes conflict and disrupts group harmony. ○	○	Good CAN DO attitude; helps keep group together by cooperating and encouraging others. ○	○	Cheerful and highly cooperative; influences people to carry their share of load and pull together. Keeps group focused on team goals. ○	○	
TOTAL FOR TEAM FACTOR (add items 1 through 4) ALSO ENTER IN THE SPACE PROVIDED ABOVE								

PREVIOUS EDITION IS OBSOLETE

SN 7530-01-GF3-06

WORK FACTOR: MEASURES AN INDIVIDUAL'S ABILITY TO USE KNOWLEDGE, SKILL, AND DIRECTION TO ACCOMPLISH WORK

	1	2	3	4	5	6	7		MARK
1. KNOWLEDGE	○	Weak for paygrade; frequently shows unfamiliarity with common procedures and/or terminology of rating or special assignment area. ○	○	Shows good knowledge of rating or special assignment area by solving everyday problems encountered while completing most assigned tasks. ○	○	Shows exceptional knowledge of rating or special assignment area for paygrade; develops and analyzes alternatives needed for solving difficult problems; able to perform all tasks. ○	○		
2. DETERMINING PRIORITIES	○	Doesn't know where to start work; requires assistance in sorting out tasks that need to be done first. ○	○	Recognizes difference between routine and priority tasks with minimal assistance, producing good work organization. ○	○	Able to apply proper priorities to accomplish even the most complex tasks with little or no assistance; organizes work accordingly. ○	○		
3. USING RESOURCES	○	Frequently wastes materials or unable to properly utilize tools, publications, and equipment. Assigns wrong persons or skills to do a given task. ○	○	Makes good use of available personnel and their skills, materials, tools, equipment, and publications in completing assigned tasks. ○	○	Fully and effectively utilizes all available resources. Utilizes all personnel and their skills to capacity in a positive working atmosphere. ○	○		
4. MONITORING WORK	○	Often unaware of own and/or subordinate's work load; fails to follow-up or stay aware of status of work. ○	○	Monitors own and/or subordinates work in progress; able to recognize when change is necessary and direct same. ○	○	Constantly aware of status of all tasks in progress. Continually follows up to ensure all details completed. ○	○		
5. GUIDANCE REQUIRED	○	For assigned tasks requires more guidance than expected for paygrade and experience; without guidance work frequently falls off/slows down. ○	○	Works well on own; completes routine tasks without supervision. Needs minimum guidance for new or complex tasks. Asks questions if task is unclear. ○	○	Needs no guidance other than initial direction to complete even new or complex tasks. Uses own knowledge and/or experience and that of subordinates to resolve difficulties. ○	○		
6. KEEPING SUPERVISOR INFORMED	○	Fails to advise supervisor of changing situations occurring during work or watchstanding; doesn't report when task completed. ○	○	Provides factual and accurate reports to supervisor on changing work or watchstanding situations. ○	○	Consistently keeps supervisor informed of progress/results, unusual events on watch, or new work efforts. Reports back without fail. ○	○		
7. WORKMANSHIP	○	Work often of poor quality and needs upgrading or redoing to be acceptable. Stands poor watch; often fails to comply with rules/standing orders. ○	○	Uses training, experience, and proper procedures to produce finished work of good quality. Stands good, responsible watches. ○	○	Work consistently of highest quality; exceeds expectations and/or standards set for task. While on watch sees and reports unusual situations; corrects if possible. ○	○		
8. MEETING DEADLINES	○	Often late; makes little effort to meet job deadlines or to complete required training; wastes time. ○	○	Can be relied upon to complete assigned tasks or required training in time allotted. ○	○	Assigned tasks and required training always completed in allotted time and often ahead of schedule. ○	○		
9. LEARNING FROM EXPERIENCE	○	Repeats mistakes; doesn't always learn from doing; considers criticism as personal attack. ○	○	Learns from criticism and experience; only has to be told once. ○	○	Quick learner; takes advantage of and expands from work experience; sees all criticism as constructive welcomes suggestions from others. ○	○		
10. OBSERVING SAFETY PRACTICES	○	Careless, negligent; frequently violates safety procedures. ○	○	Is safety conscious; reports unsafe conditions. Uses safety equipment when required, and observes safety rules. ○	○	Extremely safety conscious; reports unsafe conditions and corrects when possible. Uses safety equipment and ensures others do the same. ○	○		
11. STAMINA	○	Physically/mentally tires when required to work longer than normal workday. Balks at putting in overtime. Productivity or safety drops in stressful situations. ○	○	Capable of sustained physical/mental activity; is able to work longer than normal workday without loss of productivity or safety. Handles stressful situations well. ○	○	Great physical/mental reserves. Can work long hours over several days and still remain very productive and safe Thrives on stressful situations. ○	○		
TOTAL FOR WORK FACTOR (add items 1 through 11) ALSO ENTER IN THE SPACE PROVIDED ON PAGE 1									

LEADERSHIP FACTOR: MEASURES AN INDIVIDUAL'S ABILITY TO GUIDE, DIRECT, DEVELOP, INFLUENCE, AND BE SUPPORTIVE OF OTHERS IN THE PERFORMANCE OF WORK.

	1	2	3	4	5	6	7		MARK
1. TRAINING OTHERS	○	Places little importance on training; fails to provide opportunity for subordinates to develop skills. Lacks proper knowledge or is ill-prepared when giving formal or informal training. ○	○	Participates in formal, informal, and on job training; successful in teaching others; encourages trainees to improve. ○	○	Actively involved in all training Willingly spends extra time when necessary to ensure training is delivered and understood. ○	○		
2. PROVIDING FEEDBACK	○	Rarely gives praise/criticism to subordinates or others. ○	○	Provides feedback. Points out both good and bad work habits to subordinates and/or others he/she works with. ○	○	Consistently provides accurate and timely feedback in the form of praise or constructive criticism to subordinates and/or others Insists on the same from subordinates ○	○		

REPRODUCED AT GOVERNMENT EXPENSE

•U.S. GPO: 1985-517-100

	1	2	3	4	5	6	7
3. ENFORCING STANDARDS	○	Exercises minimal control over subordinates or others; inconsistent at enforcing military rules and regulations or shows favoritism and tendencies to religious, racial, sexual or ethnic bias. ○	○	Requires subordinates and others to conform to military rules and regulations. Enforces standards uniformly without regard to religious, racial, sexual or ethnic background. ○	○	A strong leader; requires conformance to all rules and regulations by everyone, even those outside his/her work group. Enforcement uniformly applied regardless of religion, race, sex or ethnic background. ○	○
4. EVALUATING OTHERS	○	Not a good judge of people or judges them unfairly; written or oral reports on performance or actions by others (when made) incomplete or inconsistent with facts or shows favoritism or tendencies to religious, racial, sexual or ethnic bias. ○	○	Is a good judge of people; keeps open mind when evaluating others. When appropriate, provides complete and accurate written or oral reports to supervisors on performance of others. Is not influenced by religious, racial, sexual or ethnic background. ○	○	Is keenly aware of others and what they can do; judges honestly and fairly. When appropriate, provides complete, accurate and timely reports, oral or written, that are consistent with actual performance of others. Evaluations are never affected by religious, racial, sexual or ethnic bias. ○	○
5. DIRECTING OTHERS	○	Disorganized when directing subordinates; often too lenient in exerting influence over others; doesn't require action from others when situation dictates. Subordinates may not know their role in organization. ○	○	Knows and uses people's abilities to the best advantage; requires them to work to same high standards he/she sets for self. Requires action from others when necessary to complete work. Subordinates know their role. ○	○	Exerts positive influence over group. Demands quality work; gets prompt action from others even in difficult situations. Ensures each person knows and understands his/her role in organization. ○	○
6. LOOKING OUT FOR OTHERS	○	Shows little concern for welfare of others. Is unaware of or doesn't want to become involved with their problems, needs or goals. ○	○	Is aware of others and their problems, needs and goals. Willing to listen and help as needed. Will initiate action to ensure those who need assistance receive it. ○	○	Very perceptive to problems and needs of all others; actively works to ensure positive action is taken to assist those who need help. Follows up to ensure assistance was rendered in a proper and complete manner. ○	○
7. SETTING AN EXAMPLE	○	Sets poor example by projecting less than a positive attitude towards assigned work, the Coast Guard, unit policies or decisions of seniors. Adversely affects willingness of others to work cheerfully. Sets poor example by improper actions, manners or conduct. ○	○	Influences others by projecting a positive and enthusiastic attitude. Willingly supports policies and decisions of seniors. Is able to get others to willingly produce good work. Sets good example for others through actions, manners and conduct. ○	○	Gains complete respect and confidence of others. Promotes acceptance of all work, new policies and changes. People enjoy working for or with this person. He/she makes even difficult or unpleasant work seem worthwhile. A great role model. ○	○

TOTAL FOR LEADERSHIP FACTOR (add items 1 through 7) ALSO ENTER IN THE SPACE PROVIDED ON PAGE 1

REPRESENTING THE COAST GUARD FACTOR: MEASURES HOW AN INDIVIDUAL ACTS WHEN DEALING WITH OTHER UNITS, SERVICES, AGENCIES, BUSINESSES, OR THE PUBLIC.

	1	2	3	4	5	4	7
1. COURTESY	○	Often fails to show proper respect when dealing with others. May be offensive in speech, manner or gesture; reflects poorly on the Coast Guard. ○	○	Treats those he/she contacts courteously and respectfully. When representing the Coast Guard acts to present self and service in a favorable light. ○	○	Goes out of way to ensure courteous and respectful treatment is extended to those with whom he/she deals. Insists on similar actions by subordinates. ○	○
2. APPEARANCE	○	Often fails to wear uniform properly on or away from unit; hat worn improperly or not at all; uniform may be unbuttoned or incomplete; looks sloppy. ○	○	Looks good in uniform. Wears uniform properly and proudly; hair well groomed, properly trimmed and cut to proper length. Presents physically trim appearance. ○	○	A credit to the Coast Guard; creates a clear impression of one who is proud of his/her uniform and service and reflects it in a smart, physically trim military appearance. ○	○
3. COMMUNICATING	○	Often unable to communicate effectively with others. Uses harsh or loud tones; may talk down to listeners and not give them a chance to speak; ignores or pays little attention to questions. ○	○	Speaks courteously to others. Considers race, sex, religion and ethnic background of listeners. Gives others a chance to speak and make their point; maintains positive, friendly tone even when those dealing with become unfriendly or abusive. ○	○	Speaks and listens to others in a manner that conveys a sincere desire to understand and assist if necessary. Answers questions clearly and accurately. An excellent choice for representing the Coast Guard in public affairs matters; maintains poise even with hostile audiences. ○	○
4. PROFESSIONALISM	○	Often a poor representative of Coast Guard; shows ignorance of or lack of commitment to Coast Guard missions; portrays attitude that reflects incompetence, lack of interest or poor dedication to duties. ○	○	Competent in his/her specialty; is aware of impact of mission on the public and government; effectively completes tasks involving contact with others; reflects attitude of dedication and professionalism. ○	○	A professional in every sense of the word; extremely competent in his/her specialty; leaves others with distinct impression they have been dealt with openly and competently. A distinct credit to the Coast Guard. ○	○
5. EVEN-HANDEDNESS	○	Inconsistent in applying Coast Guard programs to public sector. May try to bully those he/she is dealing with; may change mind or position when pressured by angry or indignant persons. ○	○	Treats those he/she encounters in course of Coast Guard business in a fair and impartial manner; shows no favoritism; does not falter when faced with difficult situations. ○	○	Completely honest and impartial in dealing with others; enforces rules or applies Coast Guard programs fairly and uniformly; handles difficult situations with great tact and diplomacy. Does not give in to pressure. ○	○

TOTAL FOR REPRESENTING THE COAST GUARD FACTOR (add items 1 through 5) ALSO ENTER IN THE SPACE PROVIDED ON PAGE 1

UMAN FACTOR: MEASURES THOSE QUALITIES WHICH THE COAST GUARD VALUES IN ITS PEOPLE.

	1	2	3	4	5	6	7		MARK
ADAPTABILITY	○	Doesn't like changes in job, policies and/or environment; is slow to adjust; effectiveness impaired by change. ○	○	Takes changes in stride; able to adjust; maintains effectiveness during change. ○	○	Very flexible; adjusts easily even to major changes in job, policies and/or environment; maintains high degree of effectiveness regardless. ○	○		
. JUDGMENT	○	Sometimes indecisive or makes hasty or improper decisions. Sometimes fails to consider all facts or alternatives. ○	○	Makes correct decisions based upon facts, alternatives, and urgency of situation. ○	○	Consistently makes timely and correct decisions; maintains composure even in face of difficult decisions; develops and weighs alternatives effectively. ○	○		
. RESPONSIBILITY	○	Slow to accept responsibility for actions properly within his/her control. ○	○	Can be trusted to get the job done even when the boss is out. Accepts responsibility for his/her actions. ○	○	Very trustworthy and dependable; holds self and others to high standards of performance and integrity. Accepts responsibility for actions regardless of consequences. ○	○		
. LOYALTY	○	Occasionally shows lack of pride in unit or loyalty to Coast Guard, unit, supervisor, or subordinates; may complain or otherwise outwardly show lack of commitment to unit and its mission, to the service as a whole, or to well-being of subordinates. ○	○	Exhibits pride in being part of Coast Guard; supports decisions of Coast Guard and command; committed to doing best job possible. Backs his/her people. ○	○	Extremely loyal to superiors, to unit and to the Coast Guard; proud of own involvement with Coast Guard. Shows deep dedication to duty through actions and verbal support of unit and its missions. Strong supporter of subordinates. ○	○		
. HUMAN RELATIONS	○	Exhibits discriminatory tendencies towards others due to their religion, sex, race or ethnic background. May use position to harass others; is disrespectful, makes slurring remarks. ○	○	Treats others fairly and with dignity regardless of religion, sex, race or ethnic background; carries out responsibilities towards others based on facts, not personal desires, background or feelings. ○	○	Actively works to uphold fair and equal treatment of others regardless of religion, sex, race or ethnic background. Holds subordinates accountable for their actions. Does not tolerate prejudicial actions or behavior on the part of anyone. ○	○		
. INTEGRITY	○	Is untrustworthy, shades the truth, takes advantage of situations for personal gain. ○	○	Has strong moral character; is a fair and honest individual; is trustworthy. Never shades the truth, regardless of consequences. ○	○	Adheres to the highest moral principles of honesty, truthfulness and integrity and demands same from subordinates. Can be trusted with the most discreet or sensitive information. ○	○		
. SOBRIETY	○	Use of alcohol results in reduced job performance; may bring discredit to service through alcohol influenced incidents while off-duty. ○	○	A nondrinker or if he/she uses alcohol, it is used discriminately and in moderation. Job performance not affected by use of alcohol; no discredit brought to service. ○	○	Meets standard in "four" column. In addition, does not accept indiscriminate use by others as excuse for diminished performance. Holds others responsible for temperate use. Actively encourages moderation in others with whom he/she associates. ○	○		
TOTAL FOR HUMAN FACTOR (add items 1 through 7) ALSO ENTER IN THE SPACE PROVIDED ON PAGE 1									

ATTACH COMMENTS ON SEPARATE SHEET

IGNATURE OF SUPERVISOR: DATE:

PPROVING OFFICIAL:

☐ CONCUR ☐ DO NOT CONCUR. SEE CHANGES MARKED IN RED.

☐ COUNSELING REQUIRED *(Specify Areas)*:

SIGNATURE DATE

CKNOWLEDGMENT BY EVALUEE: *Information contained herein is protected by the Privacy Act and is not authorized to be disclosed without official need to know.*

I have reviewed my evaluation form and understand that I have 15 working days from the date below to appeal the final marks awarded.

I understand that I shall be given a copy of my completed evaluation form unless I specifically do not want one.

EVALUEE'S SIGNATURE DATE

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6. Commanding Officer 1
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United States Coast Guard
Training Center
Petaluma, California 94952-5000

7. Superintendant 1
Attn: Benjamin Roberts
Administrative Sciences Department, Code 036
Naval Postgraduate School
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8. Superintendant 1
Attn: Alice Crawford
Administrative Sciences Department, Code 036
Naval Postgraduate School
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